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The correction for refraction has been applied where the difference of declination made it sensible.

The apparent place of Lac. 1685 has been derived from micrometric measures with B.A.C. 1511, which is in the Williamstown Catalogue. B.A.C. 1564 and 1644 were both observed in Melbourne in 1880. The approximate places of the stars which are not to be found in any Catalogue in our possession are as under:

Star.	Mag.	R.A. h m s	N.P.D. ° ′
a	7½	5 4 49	124 41
b	7½	5 8 9	124 37
c	7	5 4 12	123 54
d	6½	5 5 22	123 40
e	8	5 2 13	116 57
f	8	5 4 24	113 16
g	8½	5 8 9	108 32
h	9	5 8 1	107 44
i	9	5 9 8	104 4
k	9	5 12 47	96 22

The place of Lalande 9853 has been taken from the B.A. Lalande, and μ *Leporis* was observed at Melbourne with the Transit Circle on the day of the comparisons.

From the observations of the evenings of May 23, June 1 and 10, the following parabolic elements have been computed by Mr. White:

T	June 16·41135 Greenwich Mean Time.
π	265° 8′ 54″
☊	270° 56′ 47″ Mean Equinox 1881·0.
i	63° 28′ 30″
log. q	9·865998

Motion Direct.

The errors of the middle place (C − O) are in longitude −0″·3; in latitude −5″·9.

Observations of Comet b 1881 made at Graham's Town.

By L. A. Eddie, F.R.A.S.

Last evening, May 27, about 7^h 10^m o'clock, I discerned a large comet about 10° or 12° above the south-western horizon on the boundaries of the constellations *Columba* and *Cœlum*, forming almost an isosceles triangle with *o Columbæ* and γ *Cœli*, about 4° north preceding *o Columbæ*. This comet appeared to the naked eye like a good-sized planetary nebula or nebulous star, with a

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faint stream of light extending upwards from it towards the south-east at an angle of about 45° to the horizon, and passing midway between the two stars above-named. When viewed through an opera-glass, the nucleus appeared of a rich golden colour and of great brilliancy, having a diameter, as near as one could guess, of 1″. The glass was not sufficiently powerful to reveal any coma, but when the round ball of light forming the nucleus had set, there was still a considerable glow of golden light in that part of the tail immediately contiguous to the horizon. The tail was of a faint yellow or straw colour, about 4′ in breadth, from 6° to 8° in length, and with little if any curvature.

The comet set at 5 minutes to 8. The weather was stormy; but the sky was tolerably clear in the neighbourhood of the comet. The tail proceeded from the whole breadth of the nucleus, and not, as in the case of the Great Southern Comet of 1880, from an arc of the periphery only.

In consequence of being away from my observatory, I was unable to bring my 9½-in. Calver and 3-in. refractor to bear upon the comet.

Mrs. L. A. Eddie saw what she considered to be a comet with two tails on Thursday evening. This may probably have been the same.

Saturday, 28th.—Cloudy. Saw comet for a second only through a thick fog.

Sunday, 29th.—Cloudy. Comet not seen.

Monday, 30th.—Very windy and wet. A rent in the clouds about 6.15 P.M. revealed the comet, though for a few moments only. It did not seem to have moved far from where I had observed it on Thursday, about 4° north by west, but as the time afforded for observing was brief, I was unable to fix its position with any degree of accuracy. If a straight line were drawn from β to α *Columbæ* and continued to a point about 2½ times the distance of β from α, the comet was to be found on this occasion a little to the south of this point. It was still in the constellation *Columba* near the confines of *Lepus*. When viewed through the 3-inch refractor, it revealed a small but brilliant nucleus, condensed at the centre, and surrounded by an extensive coma of moderate brilliancy, even to its outer edge.

The gradation of light from nucleus to coma was sudden, though unbroken by any dark interval. The tail appeared broad, scattered and ragged, but very faint, and soon fading away to invisibility. Before, however, I could examine it carefully the clouds again concealed the comet from view, and I caught but one short momentary glance of it again during the evening, and that through a thin cloud.

Tuesday, 31st.—Wet and cloudy again. Saw the comet at 6·15 P.M., during an interval between the showers. It was not far from where it was seen last evening, but it had sensibly increased in brightness, and shone as a star of the second magni-

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tude. The tail had also increased in length and visibility, and could be traced to about 12° or 13° from the nucleus. It extended to 2° or 3° beyond *o Columbæ*, which star it grazed with its upper edge. When viewed through the 3-in. refractor the coma seemed much broader than on the previous evening, and was fully 6′ in diameter. The width of the tail had increased to 12′ to 15′ at its widest part. The fact that this comet is increasing in brightness, tends to show, I think, that it is yet approaching us, and its slow change of apparent position with reference to the star in its vicinity would show that it is at present describing the arc of a very large orbit as it nears the Sun from the depths of space. But I fear it is yet too soon to speculate, for the very unfavourable state of our heavens which has prevailed ever since the first appearance of this comet, has quite prevented any reliable observation even with the naked eye, so that, indeed, our visitor may possibly be diminishing in brightness rather than increasing.

Wednesday, June 1st.—Evening beautifully clear, not a cloud in the sky. Comet visible to the naked eye at 5·30 P.M.; young moon very bright. Comet situated 5 hours 8 min. R.A. 28° S.D. approximately. The 9½-inch Calver revealed a beautiful object, somewhat resembling Pape's drawing of Donati's comet of 1858, and Brodie's of Coggia's comet of 1874. The nucleus appeared to be inclosed in a cometic envelope or series of envelopes of parabolic form. It was not, however, situated in the focus of this curve, as was the case with the comets mentioned above, but was on one side of this point, by about the breadth of its own diameter on the side towards the Sun. The immediate focus was occupied by a condensed stream of coma, issuing, as it were, from the nucleus. This stream was bounded on its exterior edge by a darker interval, also partaking of the parabolic form, but not extending over the nucleus. There was another dark rift of similar form around the cometic envelope near the interior limits of the comet; beyond this a faint light fading away to invisibility. There was also a dark interval immediately behind the nucleus, which gave it a sharp definition on its exterior edge. The tail appeared like the continuation of this luminous parabolic envelope, widening out as its distance from the focus increased, and fading away to invisibility as the luminous matter of which it is composed became more and more rare. The tail seemed to the naked eye much shorter than last evening, but this may be owing to the increased moonlight. It terminated near *o Columbæ*. The movement of this body is N.W., so that it will set earlier each evening. It set on this occasion at 7·40 P.M.

Thursday, June 2.—Sky clear till 7 P.M. when it again clouded over. Saw comet about $5^h\ 45^m$ P.M. It had moved a little to the N.W. of its position last evening, and was now about $5^h\ 10^m$ R.A. and 27° S.D. Tail could still be traced with naked eye to *o Columbæ*. When viewed through the 9½-inch Calver it was

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immediately apparent that the comet had undergone a vast change since I had observed it on the previous evening, and presented quite a new character. The nucleus was still out of the focus of the parabola, but the dense stream of cometic matter which appeared to issue from it laterally on the evening before had entirely disappeared, as had also the dark interval surrounding it; but streams of light seemed now to issue in a spiral form from the exterior edge of the nucleus, and to be beaten back again towards the tail after they had reached the outer limits of the coma, and were beaten back on that side that was farthest from the nucleus. There was still a dark interval on the interior edge of the nucleus. A great portion of the detail which existed on the previous evening had disappeared, and these spiral streams issuing from the nucleus constituted the principal feature on this occasion. The nucleus appeared slightly larger but less condensed; the gradation of light from nucleus to coma was less sudden, and the coma above the nucleus somewhat brighter. The increased moonlight interfered greatly with observation.

Friday, June 3.—Cloud cleared off at sunset. Comet visible to naked eye at $6^h 40^m$ P.M. Tail could still be traced to *o Columbæ*, which star it grazed with its lower edge. When viewed through the $9\frac{1}{2}$-inch Calver, there was no great apparent change from last evening. The detail, however, was still more diminished by the increased moonlight; the nucleus seemed nearer to the centre of the parabola, the spiral streams emanating from the nucleus less marked, and the width of the coma narrower.

Saturday, June 4.—Evening fine. Comet visible $5^h 40^m$. Situated a little east of a straight line extending from *α Columbæ* to *ε Leporis*, and about as far from the latter as *α Columbæ* is from *β Columbæ*. Tail very long. When viewed with the reflector the spiral character of the jet from the nucleus could no longer be detected. Moonlight strong.

Sunday, June 5.—Early part of evening favourable. Comet visible at $6^h 35^m$ P.M. Tail very long (about 14°) and very straight. Through the $9\frac{1}{2}$-inch, owing to the bright background, very little visible except the nucleus and upward jet of cometary vapour slightly inclined, and bent over towards the opposite side from where the nucleus was situated.

Monday, June 6.—Cloudy.

Tuesday, June 7.—Saw comet at $5^h 20^m$ A.M., not long risen. Tail appeared shorter but broader than in the evening light. Too low in horizon for observation, and when it rose higher it was soon eclipsed by the approaching sunlight. Evening, cloudy.

Wednesday, June 8.—Saw comet for a few moments only at $5^h 45^m$ P.M. Very bright, but low in the horizon. Wet, cloudy.

Thursday, June 9.—More clouds. Comet visible for a short time about 6 P.M. Situated about 45′ north of *μ Leporis*.

Graham's Town, Cape of Good Hope,
June, 1881.